THE INVENTION CLAIMED IS:

1. A charged-particle beam instrument equipped with an aberration corrector and adapted to focus a charged-particle beam onto a specimen, said instrument comprising:

said aberration corrector disposed inside optics of the instrument and having four stages of electrostatic quadrupole elements including two central quadrupole elements and two stages of magnetic quadrupole elements for superimposing a magnetic potential distribution analogous to an electric potential distribution created by said two central quadrupole elements on this electric potential distribution;

a power supply for supplying voltages to said four stages of electrostatic quadrupole elements and a power supply for supplying currents to said two stages of magnetic quadrupole elements;

an objective lens positioned downstream of the aberration corrector and acting to focus the charged-particle beam directed at the specimen;

a power supply for said objective lens;

a transfer lens system consisting of at least one stage of transfer lens located between the aberration corrector and the objective lens and acting to transfer an image plane formed by the aberration corrector to the position of the object plane of the objective lens;

a power supply for the transfer lens system;

a manual input operation device for modifying at least one of an accelerating voltage for imparting a given energy to said charged-particle beam and a working distance that is the distance between the objective lens and the specimen; and

a controller for controlling the power supply for the four stages of electrostatic quadrupole elements, the power supply for the two stages of magnetic quadrupole elements, the power supply for the objective lens, and the power supply for the transfer lens system according to operation or setting on the manual input operation device.

2. A charged-particle beam instrument equipped with an aberration corrector as set forth in claim 1, wherein the resultant magnification of the transfer lens system and the objective lens is made adjustable.

3. A charged-particle beam instrument equipped with an aberration corrector as set forth in claim 2, further comprising four stages of electrostatic octopole elements for superimposing an electric octopole potential on the electric potential distribution created by

said four stages of electrostatic quadrupole elements and a power supply for supplying voltages to said four stages of electrostatic octopole elements, and wherein said controller controls said power supply for the four stages of octopole elements according to operation or setting on the manual input operation device.

4. A charged-particle beam instrument equipped with an aberration corrector as set forth in claim 3, wherein said transfer lens system is a magnification system or a demagnification system.

5. A charged-particle beam instrument equipped with an aberration corrector as set forth in claim 4, wherein the transfer lens system is placed in such a position that when an object plane of said transfer lens system is set close to a final stage of said aberration corrector and an image plane conjugate with this object plane is set close to a front focal point of the objective lens, the magnification of said transfer lens system with respect to the conjugate point is one-third to three times.

6. A charged-particle beam instrument equipped with an aberration corrector as set forth in claim 3, wherein said transfer lens system is placed asymmetrically with respect to a plane which extends vertical to the optical axis and is located at the midpoint between a principal plane of a final stage of multipole element of said aberration corrector and a front focal point of the objective lens.

7. A charged-particle beam instrument equipped with an aberration corrector as set forth in any one of claims 3 to 6, wherein a resultant magnification of said transfer lens system and said objective lens is adjusted in such a way that fifth-order aperture aberration coefficient $C5$ at a surface of the specimen or third-order aperture chromatic aberration coefficient $C3c$ that is a fourth-order aberration is minimized in magnitude (absolute value).

8. A charged-particle beam instrument equipped with an aberration corrector as set forth in any one of claims 3 to 6, wherein the positions of the transfer lens system and the objective lens relative to the aberration corrector are so set that the magnitudes of the X- and Y-direction components $C5_x$ and $C5_y$, respectively, of the fifth-order aperture aberration coefficients $C5$ on the specimen surface or the magnitudes of the X- and Y-direction

components $C3c_x$ and $C3c_y$, respectively, of the aperture chromatic aberration coefficient C3c that is the fourth-order aperture become comparable with each other.

9. A charged-particle beam instrument equipped with an aberration corrector as set forth in any one of claims 3 to 6, wherein an electric twelve-pole potential for correcting the fifth-order aberration coefficient is superimposed on the focusing potential, chromatic aberration-correcting potential, and spherical aberration-correcting potential of the multipole elements of the aberration corrector.

10. A charged-particle beam instrument equipped with an aberration corrector as set forth in any one of claims 1 to 6, wherein there is further provided a power supply for applying a voltage to the surface of the specimen to decelerate the charged-particle beam directed at the surface of the specimen, thus reducing aberration coefficients produced prior to aberration correction.

11. A charged-particle beam instrument equipped with an aberration corrector as set forth in any one of claims 1 to 6, wherein said transfer lens system consists of a single stage of transfer lens.

12. A charged-particle beam instrument equipped with an aberration corrector as set forth in any one of claims 1 to 6, wherein said transfer lens system consists of two stages of transfer lenses.

13. A charged-particle beam instrument equipped with an aberration corrector as set forth in claim 1 or 2, wherein said transfer lens system is a magnification system or a demagnification system.

14. A charged-particle beam instrument equipped with an aberration corrector as set forth in claim 13, wherein the transfer lens system is placed in such a position that when an object plane of said transfer lens system is set close to a final stage of said aberration corrector and an image plane conjugate with this object plane is set close to a front focal point of the objective lens, the magnification of said transfer lens system with respect to the conjugate point is one-third to three times.

15. A charged-particle beam instrument equipped with an aberration corrector as set forth in claim 1 or 2, wherein said transfer lens system is placed asymmetrically with respect to a plane which extends vertical to the optical axis and is located at the midpoint between a principal plane of a final stage of multipole element of said aberration corrector and a front focal point of the objective lens.